(4) A preliminary description of the structures, systems, components, equipment, and operator actions intended to mitigate or prevent accidents.

§ 963.14 Preclosure suitability criteria.

DOE will evaluate preclosure suitability using the following criteria:

(a) Ability to contain radioactive material and to limit releases of radioactive materials;

(b) Ability to implement control and emergency systems to limit exposure to radiation;

(c) Ability to maintain a system and components that perform their intended safety functions; and

(d) Ability to preserve the option to retrieve wastes during the preclosure period.

§ 963.15 Postclosure suitability determination.

DOE will apply the method and criteria described in §§ 963.16 and 963.17 to evaluate the suitability of the Yucca Mountain site for the postclosure period. If DOE finds that the results of the total system performance assessments conducted under § 963.16 show that the Yucca Mountain site is likely to meet the applicable radiation protection standard, DOE may determine the site suitable for the postclosure period.

§ 963.16 Postclosure suitability evaluation method.

(a) DOE will evaluate postclosure suitability using the total system performance assessment method. DOE will conduct a total system performance assessment to evaluate the ability of the geologic repository to meet the applicable radiation protection standard under the following circumstances:

(1) DOE will conduct a total system performance assessment to evaluate the ability of the Yucca Mountain disposal system to limit radiological doses and radionuclide concentrations in the case where there is no human intrusion into the repository. DOE will model the performance of the Yucca Mountain disposal system using the method described in paragraph (b) of this section and the criteria in § 963.17. DOE will consider the performance of the system in terms of the criteria to evaluate whether the Yucca Mountain disposal system is likely to comply with the applicable radiation protection standard.

(2) DOE will conduct a separate total system performance assessment to evaluate the ability of the Yucca Mountain disposal system to limit radiological doses in the case where there is a human intrusion as specified by 10 CFR 63.322. DOE will model the performance of the Yucca Mountain disposal system using the method described in paragraph (b) of this section and the criteria in § 963.17. If required by applicable NRC regulations regarding a human intrusion standard, § 63.321, DOE will consider the performance of the system in terms of the criteria to evaluate whether the Yucca Mountain disposal system is likely to comply with the applicable radiation protection standard.

(b) In conducting a total system performance assessment under this section, DOE will:

(1) Include data related to the suitability criteria in § 963.17;

(2) Account for uncertainties and variabilities in parameter values and provide the technical basis for parameter ranges, probability distributions, and bounding values;

(3) Consider alternative models of features and processes that are consistent with available data and current scientific understanding, and evaluate the effects that alternative models would have on the estimated performance of the Yucca Mountain disposal system ;

(4) Consider only events that have at least one chance in 10,000 of occurring over 10,000 years;

(5) Provide the technical basis for either inclusion or exclusion of specific features, events, and processes of the geologic setting, including appropriate details as to magnitude and timing regarding any exclusions that would significantly change the dose to the reasonably maximally exposed individual;

(6) Provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers, including those processes that would adversely